converts the second voltage to a direct current voltage.

38. The system of claim 35, wherein the data signal communicated through the outer conductor traverses a point of presence.

39. The system of claim 35, wherein the power line has an insulative cover, a portion of which is removed.

40. The system of claim 39, wherein the removed portion of the insulative cover exposes the outer conductor.

43. The system of claim 35, wherein the transceiver is conductively coupled to the outer conductor to facilitate data communications therethrough.

44. The system of claim 35, wherein the first voltage is greater than 600 volts.

45. The system of claim 35, further comprising a ferrite core in communication with the center conductor, wherein the ferrite core forms part of a transformer providing power to the transceiver.

REMARKS

Claims 1-23 and 25-45 are currently pending in this application. By this amendment, claims 1-5, 7-10, 14-23, 25-28, 31-33, 35-40, and 43-45 are amended. Claim 24 has been cancelled. No new matter is added and no new claims have been added. Applicants respectfully submit that, upon entry of the subject amendment, the application will be in condition for allowance. Applicants, thus, respectfully request consideration of the above amendment and following remarks.

Also, please note that a supplemental information disclosure statement (SIDS) is being filed concurrently with the present response. The examiner is respectfully requested to review the references and initial the corresponding PTO-1449.

In the pending Office Action: (1) claims 1, 2, and 4 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 4,697,166 to Warnagiris et al. ("Warnagiris"); (2) claims 3 and 5-7 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Warnagiris in view of U.S. Patent No. 6,014,385 to Abraham ("Abraham"); (3) claims 8-24 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Abraham in view of U.S. Patent No. 4,683,450 to Max et al. ("Max"); and (4) claims 25-45 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Max in view of Abraham. The rejections of the claims are respectfully traversed based on the following discussion.

Briefly, the present invention permits the communicating of data signals through a power line. As explained in the specification of the present application at page 18, line 14 *et seq.* and shown in Figure 9, in one embodiment, the invention includes a transformer 902 that induces an AC current from the voltage carried by the center conductor 703 of the power line cable. The induced current, which may be converted to a direct current (DC), is used to power a transceiver 903 that communicates data signals via the power line. In this example embodiment, the data signals are communicated through the outer conductor 704 (which in this example cable is a concentric out conductor) of the cable 315.

Rejection under 35 U.S.C. § 102(b)

As discussed above, claims 1, 2, and 4 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Warnagiris. Applicants respectfully traverse this rejection based on the amendment made above and the following remarks.

In the application as originally filed, in Figure 9 the structure of the claimed device is shown as referenced on page 18, line 19 through page 19, line 5 of the specification. In particular, one embodiment of the present invention includes the step of inducing an AC voltage from the power signal carried by the power line. Thus, in this example embodiment, the invention induces a voltage from the power line to power the transceiver and uses the power line to communicate data signals. Claim 1 has been amended to more specifically claim inducing an AC voltage from the power signal carried by the power line.

To anticipate a claim, a single prior art reference must teach *each and every element* of the claimed invention, either expressly or inherently. MPEP § 2131 (citing Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 631 (Fed. Cir. 1987). As amended, claim 1 recites:

inducing an alternating current (AC) voltage from the power signal carried by the power line;

Warnagiris cited by the Examiner in the rejection of claim 1, fails to teach inducing a voltage from the power signal carried by the power line and powering a transceiver with the induced AC voltage. In explaining the grounds for rejection in paragraph 1 of the Office Action, the Examiner states that Warnagiris discloses powering a transceiver device with the induced AC voltage and refers in Warnagiris to "coupling circuit 22 for connecting a transceiver to a power line" and cites to col. 3, lines 29-30. While coupling circuit 22 of

Warnagiris may couple the transceiver to a power line, the transceiver is coupled to the power line for data communications – to communicate (transmit and/or receive) data through the power line – not for inducing a voltage to power the transceiver. Warnagiris fails to disclose or suggest powering a transceiver with an AC voltage induced from the power signal of the power line as required by amended claim 1.

Because none of the prior art references cited by the Examiner teaches or suggests inducing a voltage from the power signal carried by the power line and powering a transceiver with the induced AC voltage, Applicants respectfully request that the Examiner reconsider and withdraw the rejection of the pending independent claim 1. Likewise, because a dependent claim includes all the limitations of the claim from which it depends, Applicants respectfully request withdrawal of the rejections of dependent clams 2-7, which depend from independent claim 1.

In addition, with respect to the rejection of claim 6 under 35 U.S.C. § 103(a) in paragraph 3 of the Office Action, Warnagiris fails to disclose filtering of an induced AC voltage as the filtering taught by Warnagiris is filtering of the data signal – not filtering of an AC voltage induced from the power signal. See Warnagiris at col. 2, lines 19-25.

First Rejection under 35 U.S.C. § 103(a)

Claims 8-24 stand rejected 35 U.S.C. § 103(a) as being unpatentable over Abraham in view of Max. To establish a prima facie case of obviousness, the Examiner must demonstrate that "the prior art reference (or references when combined) must teach and or suggest all the claim limitations." MPEP § 2143.03. (emphasis added.) None of the prior art references cited by the Examiner, either alone or in combination, teaches or suggests the claimed device including a transformer device for inducing an AC voltage from the power signal carried by the power line and a transceiver that receives power from the transformer device. Applicants, therefore, respectfully request that the Examiner reconsider and withdraw the rejections under 35 U.S.C. § 103(a).

Claims 8 and 18 have been amended to more specifically claim inducing an AC voltage from the power signal carried by the power line. In explaining the grounds for rejection of claim 8, the Examiner states that Abraham discloses "a transformer device on an insulator of the power line for inducing an AC voltage from the power line" and cites to col. 9, lines 32-49. While the cited passage of Abraham does mention a transformer, the

transformer disclosed by Abraham is for coupling data signals to and from the power line as opposed to inducing an AC voltage from the power signal carried by the power line.

In the Office Action, the Examiner also states that Abraham teaches "a transceiver that receives power from the transformer device" and cites to col. 6, lines 18-45 of Abraham. Applicant respectfully submits that the discussion of the transceiver in Abraham is a discussion of matching the impedance of the coupler with the impedance of the characteristic line impedance. See col. 6, lines 30-34. Abraham fails to teach or suggest inducing an AC voltage from the power signal carried by the power line and a transceiver (or communication device as in claim 18) that receives power from the transformer device.

Because none of the prior art references cited by the Examiner teaches or suggests a transformer device for inducing an AC voltage from the power signal carried by the power line and a transceiver that receives power from the transformer device, Applicants respectfully request that the Examiner reconsider and withdraw the rejections of the pending independent claims 8 and 18. Likewise, because a dependent claim includes all the limitations of the claim from which it depends, Applicants respectfully requests withdrawal of the rejections of dependent clams 9-17 and 19-23, which depend from independent claims 8 and 18, respectively.

Second Rejection under 35 U.S.C. § 103(a)

Claims 25-45 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Max in view of Abraham. To establish a prima facie case of obviousness, the Examiner must demonstrate that "the prior art reference (or references when combined) must teach and or suggest all the claim limitations." MPEP § 2143.03. (emphasis added.)

Max discloses an electrical line incorporating a distributed low-pass filter that can be used as a noise protection filter that allows an electrical current of low frequency or a direct current (DC) to pass without notable attenuation, but that provides high attenuation for high-frequency currents. Col. 1, lines 49-50; col. 2, lines 11-14.

The Examiner states that Max discloses the step of "inducing voltage from the center conductor" and cites Figure 1 and col. 2, lines 64-67. However, the citation relied upon, as well as Figure 1, is simply part of the explanation of how the changes in impedance of the line cause reflections, thereby constituting a low pass filter. Max fails to disclose or suggest inducing a voltage from the center conductor of the power line. Likewise, and as discussed

above, the air-core transformer disclosed by Abraham is for coupling data signals as opposed to inducing an AC voltage that is used to power a transceiver. Thus, neither Max nor Abraham discloses or suggests inducing a voltage from the center conductor to provide power to a transceiver as required by claim 25.

In addition, while Max discloses an outer conductor (3), Max fails to disclose or suggest communicating data signals on the outer conductor of the cable as required by claims 25 and 35. The citation relied upon by the Examiner (col. 2, lines 52-63) for disclosure of this claim element describes the components of the coaxial line and sections of the line having differing impedance. However, neither this citation, nor any other in Max, suggests communicating a data signal on the outer conductor of the cable. Likewise, Abraham fails to disclose or suggest communicating a data signal on the outer conductor of a cable and, therefore, the combination of Max and Abraham fails to disclose or suggest the combination of elements in claim 25 and 35.

Because none of the prior art references cited by the Examiner teaches or suggests inducing a voltage from the center conductor of the power line, or communicating a data signal on the outer conductor of the cable, Applicants respectfully request that the Examiner reconsider and withdraw the rejections of the pending independent claims 25 and 35. Likewise, because a dependent claim includes all the limitations of the claim from which it depends, Applicants respectfully request withdrawal of the rejections of dependent clams 26-34 and 36-45, which depend from independent claims 25 and 35, respectively.

CONCLUSION

In view of the foregoing, it is respectfully submitted that the claimed invention is patentably distinguished over the asserted prior art references and that the application stands in condition for allowance. It is respectfully requested that the application be reconsidered, that all pending claims be allowed, and that the application be passed to issue.

Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the Vincent J. Roccia, at (215) 564-8946, to discuss any other changes deemed necessary in a telephonic interview.

If an additional extension is necessary for this amendment to be considered timely filed, a written conditional petition therefore is hereby made. Authorization is hereby granted to charge any deficiencies in fees, including any fees for extension of time under 37 C.F.R.

§1.136(a), to Deposit Account 23-3050. Please credit any overpayment in fees to the same deposit account.

Date: February 13, 2003

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

1. A method for [transporting] communicating a data signal over a power line having a center conductor carrying a power signal, wherein the method comprises:

inducing an alternating current (AC) voltage from the power signal carried by the power line;

powering a transceiver device with the induced AC voltage; and

communicating the data signal with the transceiver device via the power line.

2. The method of claim 1, further comprising transmitting the data signal to an end user communication device via the transceiver device.

3. The method of claim 2, wherein the data signal is transmitted over [non-metallic] a fiber optic [links] link.

4. The method of claim 1, further comprising receiving the data signal from an end user communication device via the transceiver device.

5. The method of claim 2, wherein the data signal is received over a fiber optic [links] link.

7. The method of claim 1, further comprising filtering the data signal.

8. A device for [transporting] communicating a data signal over a power line having a center conductor and an insulator, wherein the power line carries a power signal, the device [comprises] comprising:

[at least one ferrite core located on an outer insulator of the power line for increasing a inductance of the power line;]

a transformer device [located on an outer insulator] having a core disposed in relation to [of] the power line for inducing an AC voltage from the power signal carried by the power line; and

a transceiver that receives power from the transformer device, and [receives the signal from a conductor external to the center conductor] communicates the data signal through the power line.

9. The device of claim 8, further comprising:

a ferrite member disposed in proximity to the power line for increasing the inductance of a section of the power line; and

an enclosure for housing the ferrite [core] member, the transformer device, and the transceiver device.

10. The device of claim [9] 8, wherein the [enclosure attaches to the power line at a predetermined distance from a gap in the outer insulator of the power line] the power line includes a second conductor external to the insulator ,wherein the transceiver communicates the data signal through the second conductor.

14. The device of claim [8] 10, wherein the power line includes an outer insulator external to the second conductor, said outer insulator includes a gap, and the transceiver is coupled to the [external] second conductor [via a] at said gap in the outer insulator of the power line.

15. The device of claim 8, wherein the power received by the transceiver is an AC power signal and the transceiver converts the AC power signal to a direct current (DC) power signal.

16. The device of claim 8, wherein the power received by the transceiver is an AC power signal and further comprising a low-pass filter for filtering the AC power signal provided by the transformer device.

17. The device of claim 8, further comprising a high-pass filter for filtering the data signal provided via the external conductor.

18. A method for providing [transport] communication of a data signal over a [high-voltage] coaxial power cable having a center conductor carrying a power signal, an outer conductor, and an outer insulator outside the outer conductor, the method comprising:

removing a portion of [an] the outer insulator of the [high-voltage] coaxial power cable;

coupling a communication device to the [removed portion] outer conductor of the [high-voltage] coaxial power cable where the outer insulator is removed;

inducing a voltage from the power signal carried by the center conductor of the [high-voltage] coaxial power cable; and

providing the induced voltage to power the communication device.

19. The method of claim 18, further comprising grounding the outer [insulator] conductor at a predetermined distance from the communication device.

20. The method of claim [18] 19, further comprising [adjusting] selecting the predetermined length to [modify the] provide an inductance value.

21. The method of claim 18, further comprising [placing] providing at least one ferrite core [on] outside the outer insulator to adjust an inductance.

22. The method of claim 18, further comprising [adjusting a characteristic of the signal provided by the communication device] providing a gap in the outer conductor, wherein the communication device is communicatively coupled to the outer conductor on both sides of the gap.

23. The method of claim [22] 18, wherein [the signal characteristic is a voltage amplitude] the induced voltage is supplied to the communication device via a power supply.

25. A method for coupling a transceiver to an electric power line, wherein the electric power line has a center conductor that carries a first alternating current (AC) electrical voltage and a concentric outer conductor having an insulative cover, wherein the

concentric outer conductor carries a data signal, the method comprising:

inducing a second voltage from the center conductor to provide power to the transceiver; and

communicating the data signal from the outer conductor to the transceiver.

26. The method of claim 25, wherein the data signal [is provided to] carried by the concentric outer conductor [at] is supplied via a point of presence.

27. The method of claim 25, further comprising removing a portion of the insulative cover to [permit access to] expose the concentric outer conductor.

28. The method of claim 27, wherein the removed portion of the insulative cover is removed from the periphery of the [insulative] concentric outer conductor.

31. The method of claim 25, wherein the transceiver [communicates the data signal with the outer conductor using fiber optic techniques.] is conductively coupled to the outer conductor to facilitate data communications therethrough.

32. The method of claim 25, [wherein the transceiver converts the second voltage to a direct current voltage.] further comprising converting the second voltage to a direct current voltage.

33. The method of claim 25, wherein the first [alternating current] AC voltage [operates in the range of 120 volts to 15 kilovolts] is greater than 600 volts.

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35. A system for communicating a data signal on the outer conductor of an electric power line carrying an AC power signal having a first voltage on a center conductor, comprising:

[an electric power line having a center conductor that carries a first alternating current electrical voltage and having a concentric outer conductor that carries the data signal; and]

a transceiver in communication with the electric power line, wherein the transceiver [communicates the data signal with] is communicatively coupled to the [concentric] outer

conductor to provide communications therethrough, and wherein the transceiver receives electrical power from the center conductor.

36. The system of claim 35, wherein the center conductor induces a second voltage that [is received by] supplies power to the transceiver.

37. The system of claim 36, wherein the transceiver includes a power supply that converts the second voltage to a direct current voltage.

38. The system of claim 35, wherein the data signal [is provided to the concentric] communicated through the outer conductor [at] traverses a point of presence.

39. The system of claim 35, wherein the [concentric conductor] power line has an insulative cover, a portion of which is removed.

40. The system of claim 39, wherein the removed portion of the insulative cover [is removed from the periphery of the insulative conductor] exposes the outer conductor.

43. The system of claim 35, wherein the transceiver [is a fiber optic transceiver.] is conductively coupled to the outer conductor to facilitate data communications therethrough.

44. The system of claim 35, wherein the first [alternating current] voltage [operates in the range of 120 volts to 15 kilovolts] is greater than 600 volts.

45. The system of claim 35, further comprising a ferrite core in communication with the center conductor, [wherein the ferrite core induces the voltage from the center conductor] wherein the ferrite core forms part of a transformer providing power to the transceiver.